

THE CLAIMS

What is claimed is:

1. A windowed chamber comprising a radiation-transmissive window, and interiorly disposed within the chamber at least one of:
 - (i) a radiation-transmissive protective film on an interior surface of said window, and
 - (ii) a colorimetric medium disposed in viewable relationship to said window, wherein the colorimetric medium undergoes a color change in the presence of target gas species.
2. The windowed chamber of claim 1, wherein said chamber comprises a semiconductor manufacturing process chamber.
3. The windowed chamber of claim 2, wherein said semiconductor manufacturing process chamber comprises a deposition chamber.
4. The windowed chamber according to claim 2, wherein said semiconductor manufacturing process chamber comprises an effluent treatment chamber.
5. The windowed chamber of claim 4, wherein the effluent treatment chamber comprises a scrubber.
6. The windowed chamber of claim 5, wherein the scrubber comprises a dry scrubber.
7. The windowed chamber of claim 1, comprising a radiation-transmissive protective film on an interior surface of said window.

8. The windowed chamber of claim 7, wherein said film comprises a polymeric film.
9. The windowed chamber of claim 7, wherein said film is transmissive to radiation of a type selected from the group consisting of visible radiation, IR radiation and UV radiation.
10. The windowed chamber of claim 7, wherein said film comprises a visible radiation-transmissive film.
11. The windowed chamber of claim 7, wherein said film comprises a material selected from the group consisting of acrylics, vinyls, silicones, polycarbonate, polysulfone, acetates and styrenes.
12. The windowed chamber of claim 7, wherein the film comprises a pre-formed film.
13. The windowed chamber of claim 7, wherein the film comprises a form-in-place film.
14. The windowed chamber of claim 7, wherein the film has a thickness of a range of from about 2 to about 100 mils.
15. The windowed chamber of claim 7, wherein said film comprises a gel coating.
16. The windowed chamber of claim 7, wherein said film is secured to the interior surface of the window by a securement means selected from the group consisting of static charge affixation, friction fit, adhesive bonding, mechanical fixturing, intrinsic adhesion, and associative bonding.

17. The windowed chamber of claim 7, wherein the interior surface and said film are associatively bonded to one another.
18. The windowed chamber of claim 17, wherein the interior surface of the window is chemically functionalized for said associative bonding.
19. The windowed chamber of claim 7, wherein the film is manually peelable from the interior surface of the window.
20. The windowed chamber of claim 1, comprising a colorimetric medium disposed in viewable relationship to said window.
21. The windowed chamber of claim 20, wherein the chamber comprises a semiconductor manufacturing process chamber.
22. The windowed chamber of claim 20, wherein the chamber comprises a wet scrubber.
23. The windowed chamber of claim 20, wherein the chamber comprises a dry scrubber.
24. The windowed chamber of claim 20, wherein the chamber comprises a thermal reactor.
25. The windowed chamber of claim 20, wherein the chamber comprises a scrubber.
26. The windowed chamber of claim 23, wherein said dry scrubber chamber contains a bed of scrubber medium effective to abate acid gas species and/or hydride gas species.
27. The windowed chamber of claim 26, wherein the scrubber medium is effective for removal of at least one gas species selected from the group consisting of hydrogen

chloride, boron trichloride, boron trifluoride, hydrogen fluoride, arsine, phosphine, germane, boranes, stibine, silanes and alkylsilanes.

28. The windowed chamber of claim 26, wherein the colorimetric medium comprises an acid gas-reactive chemistry including a colorimetric species selected from the group consisting of iron oxide, calcium hydroxide, copper sulfate, copper hydroxide and copper carbonate.
29. The windowed chamber of claim 20, wherein the colorimetric medium comprises a sheet or web form article impregnated with colorimetric chemistry effective in exposure to a target gas species to undergo a color change.
30. The windowed chamber of claim 20, wherein the colorimetric medium is coated on a substrate.
31. The windowed chamber of claim 30, wherein the substrate comprises material selected from the group consisting of alumina, silica, molecular sieves, clays and macroreticulate polymers.
32. The windowed chamber of claim 20, wherein the colorimetric medium comprises a porous paper element impregnated with colorimetric chemistry.
33. The windowed chamber of claim 32, wherein the colorimetric chemistry comprises an impregnated species selected from the group consisting of iron oxide, calcium hydroxide, copper sulfate, copper hydroxide and copper carbonate.
34. The windowed chamber of claim 20, wherein the colorimetric medium is reposed on the interior surface of the window.

35. The windowed chamber of claim 20, wherein the colorimetric medium comprises a porous paper impregnated with colorimetric chemistry and disposed in a cartridge.
36. A monitoring apparatus having a radiation-transmissive window for transmission therethrough of radiation from a monitored environment, and circuitry for processing radiation transmitted through the window and generating a correlative output, such window having on a surface thereof exposed to the monitored environment, a radiation-transmissive protective film that is selectively removable from the window.
37. The monitoring apparatus of claim 36, wherein the radiation comprises a radiation type selected from the group consisting of visible, infrared and ultraviolet radiation.
38. The monitoring apparatus of claim 36, wherein the radiation comprises visible radiation.
39. The monitoring apparatus of claim 36, wherein said film comprises a polymeric film.
40. The monitoring apparatus of claim 36, wherein said film comprises a material selected from the group consisting of acrylics, vinyls, silicones, polycarbonate, polysulfone, acetates and styrenes.
41. A colorimetric indicating assembly for colorimetric detection of target gas species in a gaseous environment containing same, said assembly comprising a viewing window having disposed in viewable relationship thereto a colorimetric medium that in exposure to the target gas species changes color.

42. The assembly of claim 41, wherein the colorimetric medium comprises a porous paper element impregnated with a colorimetric chemistry providing a color change in exposure of the colorimetric medium to the target gas species in the gaseous environment.
43. A method of reducing maintenance of a windowed port exposed to a gaseous environment on a first surface of a window, said method comprising providing a protective film on said first surface of said window, said protective film being selectively removable from the window surface.
44. A method of monitoring a gaseous environment for detection of a target gas species therein, said method comprising disposing a viewing window in viewing relationship to the gaseous environment and disposing a colorimetric medium in the gaseous environment in viewable relationship to the window.
45. A gas detector assembly including a sheet-form element impregnated with a colorimetric medium that responsively changes color in exposure to one or more target gas species, and means for detecting such color change when the sheet-form element has changed color in exposure to such one or more target gas species.
46. A method of detecting the presence of one or more target gas species in an environment susceptible to the presence of such gas species, in which the method involves disposing a sheet-form element in the environment, wherein the sheet-form element is impregnated with a colorimetric chemistry that is effective to change color of the sheet-form element when the impregnated sheet-form element is exposed to the one or more target gas species.

47. A window exposed to a gaseous environment susceptible to incursion of target gas species in use, said window having on a surface thereof exposed to the gaseous environment a removable protective film having a colorimetric medium associated therewith, wherein the colorimetric medium undergoes a color change in exposure to the target gas species.
48. A gas detection article comprising a polymeric material that is colorimetrically responsive to presence of at least one target gas species, whereby exposure of the polymeric material to such at least one target gas species causes a color change of the polymeric material.
49. A method of detecting the presence of one or more target gas species in an environment susceptible to the presence of such gas species, in which the method involves exposing to such environment a gas detection article comprising a polymeric material that is colorimetrically responsive to presence of at least one target gas species, whereby exposure of the polymeric material to such at least one target gas species causes a color change of the polymeric material.